

LISTING OF CLAIMS

Please replace the previous claims with the following claim set.

1. (Previously presented) A method for isolating a biological target material from other material in a medium comprising the steps of:

(a) contacting the medium comprising the biological target material with silica magnetic particles, capable of reversibly binding at least 2 micrograms of the biological target material per milligram of particles to form a complex between the silica magnetic particles and the biological target material;

(b) removing the complex from the medium by application of an external magnetic field; and

(c) separating the biological target material from the complex by eluting the biological target material, whereby the isolated biological target material is obtained.

2. (Original) A method of isolating a biological target material according to claim 1, wherein the biological material isolated according to the method consists of a nucleic acid.

3. (Previously presented) A method of isolating a biological target material according to claim 1, wherein the silica magnetic particles provided in step (b) are capable of reversibly binding at least 2 micrograms of nucleic acid per milligram of particle.

4. (Original) method of isolating a biological target material according to claim 3, wherein the silica magnetic particles provided in step (b) of the method are siliceous-oxide coated magnetic particles.

5. (Original) A method of isolating a biological target material according to claim 1, wherein at least 60% of the biological target material in the complex is eluted from the particles in step (d).

6. (Original) A method of isolating a biological target material according to claim 1, wherein the biological target material eluted from the complex in step (d) contains no more than 50 parts per million of transition metal contaminants.

7.-21. Canceled.

22. (Previously presented) A method of isolating a plasmid DNA material from other materials in a medium comprising the steps of:

- (a) forming a mixture comprising a medium comprising the plasmid DNA, a siliceous oxide-coated magnetic particle with the capacity to reversibly bind at least 2 micrograms of biological target material per milligram of particle, and a chaotropic salt, wherein the chaotropic salt concentration in the mixture is sufficiently high to cause the plasmid DNA to adhere to the particle;
- (b) incubating the mixture at about room temperature until at least some of the biological target material is adhered directly to the siliceous oxide-coated magnetic particle;
- (c) removing the siliceous oxide-coated magnetic particle from the mixture using an external magnetic force; and
- (d) eluting at least 60% of the plasmid DNA adhered to the siliceous oxide-coated magnetic particle by exposing the particle to an elution solution.

23. (Original) A method of isolating a plasmid DNA material according to claim 22, wherein the chaotropic salt in the mixture formed in step (c) is a guanidinium chaotropic salt consisting of guanidine hydrochloride or guanidine thiocyanate.

24. (Original) A method of isolating a plasmid DNA material according to claim 22, wherein the concentration of chaotropic salt in the mixture formed in step (c) is between about 0.1 M and 7 M.

25. (Original) A method of isolating a plasmid DNA material according to claim 22, further comprising a step of washing the siliceous oxide-coated magnetic particle after removal from the medium, before eluting the plasmid DNA material from the particle.

26. (Original) A method of isolating a plasmid DNA material according to claim 25, wherein the washing step is done using a wash solution comprising an alcohol and a salt.

27. (Original) A method of isolating a plasmid DNA material according to claim 25, wherein the washing step is done using a wash solution comprising at least 30% alcohol by volume and a buffer.

28. (Original) A method of isolating a plasmid DNA material according to claim 22, wherein the plasmid DNA eluted from the silica magnetic particle in step (f) is substantially free of macromolecular or metal contaminants likely to interfere with further processing or analysis.

29. (Withdrawn) A kit for isolating a biological target material from a medium, the kit comprising:

an aliquot of siliceous oxide-coated magnetic particles suspended in an aqueous solution in a first container, wherein the particles have the capacity to reversibly bind at least 2 micrograms of the biological target material per milligram of particle.

30. (Withdrawn) A kit for isolating a biological target material according to claim 29, further comprising:

a chaotropic salt in a second container; and
a wash solution in a third container.

31. (Withdrawn) The kit for isolating a biological target material according to claim 29, where in the particles directly and reversibly bind at least 2 micrograms of the biological target material per milligram of particle.

32. (Withdrawn) A kit for isolating a biological target material according to claim 31, wherein the siliceous oxide-coated magnetic particles have the capacity to release at least about 60% of the biological target material adhered thereto.

33. (Withdrawn) A kit for isolating a biological target material according to claim 31, further comprising:

a chaotropic salt in a second container; and
a wash solution in a third container.

34. (Withdrawn) A kit for isolating a biological target material according to claim 33, wherein the chaotropic salt is selected from the group consisting of guanidine hydrochloride and guanidine thiocyanate.

35. (Withdrawn) A kit for isolating a biological target material according to claim 33, wherein the wash solution comprises a salt and a solvent.

36. (Withdrawn) A kit for isolating a biological target material according to claim 35, wherein said solvent is an alcohol.

37. (Withdrawn) A kit for isolating a biological target material according to claim 36, wherein the wash solution comprises said alcohol in a concentration of at least 30% by volume.

38. (Withdrawn) A kit for isolating a biological target material according to claim 36, wherein said alcohol is ethanol or isopropanol.

39. (Withdrawn) A kit for isolating a biological target material according to claim 35, wherein said salt is an acetate buffer.

40. (Withdrawn) A kit for isolating a biological target material according to claim 33, further comprising an elution solution in a fourth container.

41. (Withdrawn) A kit for isolating a biological target material according to claim 40, wherein the elution solution comprises an aqueous solution of low ionic strength buffered to a pH between about 6.5 and 8.5.

42. (Withdrawn) A kit for isolating plasmid DNA from a medium, the kit comprising:
an aliquot of siliceous oxide-coated magnetic particles suspended in an aqueous solution in a first container, wherein the particles have the capacity to directly and reversibly bind at least 2 micrograms of the plasmid DNA per milligram of particle.

43. (Withdrawn) A kit for isolating plasmid DNA according to claim 42, further comprising:

- a wash solution in a second container;
- a resuspension solution in a third container;
- a neutralization solution in a fourth container; and
- a cell lysis solution in a fifth container.

44. (Withdrawn) A kit for isolating plasmid DNA according to claim 43, wherein the wash solution comprises a salt and a solvent.

45. (Withdrawn) A kit for isolating plasmid DNA according to claim 44, wherein said solvent is an alcohol.

46. (Withdrawn) A kit for isolating plasmid DNA according to claim 45, wherein the wash solution comprises said alcohol in a concentration of at least 30% by volume.

47. (Withdrawn) A kit for isolating plasmid DNA according to claim 46, wherein said alcohol is ethanol or isopropanol.

48. (Withdrawn) A kit for isolating plasmid DNA according to claim 44, wherein said salt is an acetate buffer.

49. (Withdrawn) A kit for isolating plasmid DNA according to claim 48, wherein said chaotropic salt is a guanidinium chaotropic salt selected from the group consisting of guanidine hydrochloride and guanidine thiocyanate.

50. (Withdrawn) A kit for isolating plasmid DNA according to claim 43, wherein the resuspension solution comprises Tris-HCl, EDTA, and RNase A.

51. (Withdrawn) A kit for isolating plasmid DNA according to claim 43, wherein the neutralization solution comprises potassium acetate.

52. (Withdrawn) A kit for isolating plasmid DNA according to claim 43, wherein the cell lysis solution comprises NaOH and SDS.

53. (Withdrawn) A kit for isolating biological target material according to claim 33, wherein the first chaotropic salt and the second chaotropic salt are the same.

54. (Withdrawn) A kit for isolating plasmid DNA according to claim 43, further comprising a solution comprising a second chaotropic salt in a sixth container.

55. (Withdrawn) A kit for isolating plasmid DNA according to claim 54, wherein said second chaotropic salt is a guanidinium chaotropic salt consisting of guanidine hydrochloride or guanidine thiocyanate.

56. (Withdrawn) A kit for isolating plasmid DNA according to claim 54, wherein the first chaotropic salt and the second chaotropic salt are the same.

57. (New) A method for isolating a biological target material from other material in a medium comprising the steps of:

(a) contacting the medium comprising the biological target material with silica magnetic particles, wherein the silica magnetic particles have a diameter of between 3 and 10 micrometers, to form a complex between the silica magnetic particles and the biological target material;

(b) removing the complex from the medium by application of an external magnetic field; and

(c) separating the biological target material from the complex by eluting the biological target material, whereby the isolated biological target material is obtained.

58. (New) A method of isolating a biological target material according to claim 57, wherein the silica magnetic particles provided in step (b) have a total pore volume of at least 0.2 ml/g of particle mass, as measured by nitrogen BET.

59. (New) A method of isolating a biological target material according to claim 1, wherein the silica magnetic particles provided in step (b) have a total pore volume of at least 0.2 ml/g of particle mass, as measured by nitrogen BET.

60. (New) A method of isolating a biological target material according to claim 6, wherein the silica magnetic particles provided in step (b) have a total pore volume of at least 0.2 ml/g of particle mass, as measured by nitrogen BET.